

Claims

- [c1] A bare floor cleaner comprising:
 - a cleaning head;
 - an upright handle pivotally mounted to the cleaning head,
 - a cleaning implement associated with the cleaning head and adapted to move along a surface to be cleaned; and
 - a thermal storage body associated with the cleaning head and adjacent to the cleaning implement, wherein the thermal storage body is adapted to store thermal energy and to release the stored thermal energy over an extended period of time to the cleaning implement.
- [c2] The bare floor cleaner of claim 1 wherein the thermal storage body comprises at least one component that carries out an exothermic process to release the thermal energy.
- [c3] The bare floor cleaner of claim 2 wherein the at least one component undergoes a phase change during the exothermic process.
- [c4] The bare floor cleaner of claim 2 wherein the exothermic process is an exothermic chemical reaction.

- [c5] The bare floor cleaner of claim 2 wherein the exothermic process is reversible and the thermal storage body can be reused.
- [c6] The bare floor cleaner according to claim 1 wherein the thermal storage body comprises a resilient pad.
- [c7] The bare floor cleaner according to claim 1 and further comprising a resilient pad and the resilient pad is positioned between the thermal storage body and the cleaning implement.
- [c8] The bare floor cleaner according to claim 1 wherein the cleaning implement comprises a cleaning cloth.
- [c9] The bare floor cleaner according to claim 1 wherein the thermal storage body is removably mounted to the upright handle for placement in a heating device.
- [c10] The bare floor cleaner according to claim 9 wherein the thermal storage body is removably mounted to the cleaning head for placement in a heating device.
- [c11] The bare floor cleaner according to claim 1 wherein the thermal storage body is directly adjacent the cleaning implement.
- [c12] The bare floor cleaner according to claim 1 wherein the

thermal storage body includes at least one component that is microwave active and the thermal storage body is encapsulated by a resilient pad.

- [c13] The bare floor cleaner according to claim 1 wherein the thermal storage body comprises a liquid phase of a heat active fluid and a solid phase suspended in the liquid phase.
- [c14] The bare floor cleaner according to claim 13 wherein the heat active fluid is adapted to absorb microwave energy.
- [c15] The bare floor cleaner according to claim 14 wherein the solid phase undergoes a phase change.
- [c16] The bare floor cleaner according to claim 15 wherein the liquid phase comprises a water and alcohol mixture and the solid phase comprises an organic wax with a melting point of at least 30 °C but no greater than 65 °C.
- [c17] The bare floor cleaner according to claim 16 wherein the melting point of the organic wax is within a range of 53 °C to 57 °C.
- [c18] The bare floor cleaner according to claim 13 wherein the thermal storage body further comprises a mechanical re-emulsifier.
- [c19] The bare floor cleaner according to claim 13 and further

comprising a resilient pad positioned between the thermal storage body and the cleaning implement and wherein the resilient pad is porous to thermal energy which can pass from the thermal storage body to the cleaning implement over an extended period of time.

[c20] The bare floor cleaner according to claim 1 wherein the upright handle is removably mounted to the cleaning head whereby the cleaning head can be manipulated by hand to clean a hard surface without the handle.

[c21] The bare floor cleaner according to claim 1 wherein the thermal storage body comprises a gel.

[c22] A hard surface cleaner comprising:
a cleaning head;
a cleaning implement associated with the cleaning head and adapted to move along a surface to be cleaned; and
a thermal storage body associated with the cleaning head and adjacent to the cleaning implement, wherein the thermal storage body is adapted to store thermal energy and to release the stored thermal energy over an extended period of time to the cleaning implement.

[c23] A method of cleaning a surface comprising the steps of:
heating a thermal storage body with a heating device to impart thermal energy to the thermal storage body;

mounting the thermal storage body to a bare surface cleaning implement in heat transfer relationship; and moving the bare surface cleaning implement across the surface to be cleaned while transferring thermal energy from the thermal storage body to the bare surface cleaning implement.

- [c24] A method of cleaning a surface, the method comprising the steps of:
- initiating an exothermic reaction within a thermal storage body;
 - mounting the heated thermal storage body to a bare surface cleaning implement in heat transfer relationship thereto; and
 - moving the bare surface cleaning implement across the surface to be cleaned while transferring thermal energy from the thermal storage body to the bare surface cleaning implement.